

Encyclopedic Dictionary of  
**ELECTRONICS**  
and  
**NUCLEAR ENGINEERING**

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ical phenomena associated  
function, and life processes

capillary effects in liquids  
of an electric current or  
ge. Used in the measure-  
ts of electricity or on very  
ial, as in the capillary

form of Electrocapil-

f a mercury-electrolytic  
characteristic of applied  
e tension.

strument which measures  
rent or voltage waveform  
of the heart muscles. The  
d an electrocardiogram  
ballistocardiographic jerk-

notion of particles in a  
the influence of an applied

An electrochemical equi-  
pound, radical, or ion is  
ce involved in a specified  
during the passage of a  
ricity, such as a faraday,  
b. (AIEE) See *Coulomb*

n. The effect of increased  
the setting up of a back  
electrolytic cell as a result of  
electrodes (chiefly due to  
lated bubbles of hydrogen  
electrodes. See *Electrolytic*

: Recording, electrochemical.  
electromotive series.

electric valve consisting  
a solution or compound,  
high current flows more  
an in the other direction,  
ption is accompanied by  
See *Rectifier electrolytic*.

ranch of science and  
th reciprocal transforma-  
ric energy. (AIEE)

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*Electrochronograph*. An electromagnetic recorder in  
circuit with an electrically driven clock. See *Chrono-  
graph*.

*Electroculture*. Stimulation of growth, flowering, or  
seeding of plants by electrical means. (AIEE)

*Electrocution*. The destruction of life by means of  
electric current. (AIEE)

*ElectroData computer*. See *Datatron*.

*Electrode*. 1. A conductor, but not necessarily a metal,  
through which a current enters or leaves one material  
or medium and enters another; i.e., as an electrolytic  
cell, arc, furnace, vacuum tube, gaseous discharge  
tube, or any conductor of the nonmetallic class.  
Specifically, in an electrolytic cell, an electrode is a  
conductor of the metallic-conductor class, at which  
there is a change from conduction by electrons to  
conduction by ions or colloidal particles. (AIEE)

2. Of a semiconductor device, an element that  
performs one or more of the functions of emitting or  
collecting electrons or holes, or of controlling their  
movements by an electric field. (AIEE/IRE) See  
*Accelerating anode*; *Anode*; *Applicator electrodes*;  
*Backplate*; *Base electrode*; *Bipolar electrode*;  
*Cathode*; *Collector*; *Color-selecting electrode sys-  
tem*; *Composite electrode*; *Continuous electrode*;  
*Control electrode*; *Control grid*; *Convergence elec-  
trode*; *Coplanar electrodes*; *De-celerating elec-  
trode*; *Deflecting electrode*; *Deflecting electrode*,  
*radial*; *Dynode*; *Filament*; *Focusing electrode*; *Grid*;  
*Ground electrode*; *Guard ring*; *Half cell*, *quinh-  
drone electrode*; *Ignitor electrode*; *Intensifier elec-  
trode*; *Keep-alive electrode*; *Modulating electrode*;  
*Negative electrode*; *Pad electrode*; *Plate*; *Point elec-  
trode*; *Positive electrode*; *Screengrid*; *Self-electrode*;  
*Signal electrode*; *Sounding electrode*; *Starting elec-  
trode*; *Starter (gas tubes)*; *Suppressor grid*; *Target*;  
*Welding electrode* entries.

*Electrode admittance*. Of the  $j$ th electrode of an  
 $n$ -electrode electron tube, the short-circuit driving-  
point admittance between the  $j$ th electrode and the  
reference point measured directly at the  $j$ th elec-  
trode. *Note*: To be able to determine the intrinsic  
electronic merit of an electron tube, the driving-point  
and transfer admittances must be defined as if  
measured directly at the electrodes inside the tube.  
The definitions of electrode admittance and electrode  
impedance are used for this purpose. (IRE) See  
*Electron tube admittance*.

*Electrode, calomel*. See *Half-cell, calomel*.

*Electrode capacitance*. Of an  $n$ -terminal electron  
tube, the capacitance determined from the short-

circuit driving-point admittance at that electrode.  
See *Electron tube admittance*.

*Electrode characteristic*. 1. In an electron tube, a  
relation between the electrode voltage and the  
current to an electrode, all other electrode voltages  
being maintained constant. (IRE) See *Electron tube  
static characteristics*; *Electron tube dynamic charac-  
teristics*; *Electron tube incremental coefficients*. 2. In  
a semiconductor, see *Transistor common base charac-  
teristics*; *Transistor common collector characteristics*;  
*Transistor common emitter characteristics*.

*Electrode color-selecting system*. See *Color-selecting elec-  
trode system*; *Focusing and switching grille*.

*Electrode concentration cell*. A concentration cell,  
which has an electrolyte and electrodes manufactured  
from the same (metal) element, but with differing  
degrees of concentration. An example is the use of  
amalgams in an electric cell structure. See *Concen-  
tration cell*.

*Electrode conductance*. Symbol  $g_e$ ,  $k_e$ . The real part  
of the electrode admittance, q.v. (IRE)

*Electrode current*. Of electron tubes, the net current  
from an electrode into the interelectrode space.  
*Note*: The terms cathode current, grid current, anode  
current, plate current, and so forth, are used to  
designate electrode currents for these specific  
electrodes. Unless otherwise stated, an electrode  
current is measured at the available terminal. (IRE)  
See the following three definitions.

*Electrode current, average*. In an electron tube, the  
value obtained by integrating the instantaneous  
electrode current over an averaging time and dividing  
by the averaging time.

*Electrode-current averaging time*. In an electron  
tube, the time interval over which the current is  
averaged in defining the operating capabilities of  
the electrode (for instance, one period of the signal).

*Electrode dark current*. Of a phototube or camera  
tube, the electrode current that flows when there is  
no radiant flux incident on the photocathode, under  
specified conditions of radiation shielding. *Note*:  
Since dark current may change considerably with  
temperature, temperature should be specified.

*Electrode dissipation*. The power dissipated in the  
form of heat by an electrode as a result of electron  
and/or ion bombardment and radiation from other  
electrodes.

*Electrode drop*. The voltage drop in the electrode due  
to its resistance. (AIEE)